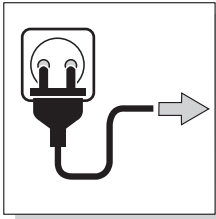
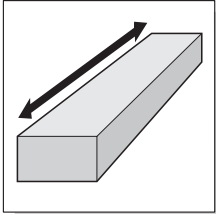


marathon 550 SL, 800 SL, 1100 SL



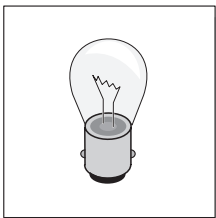
230V, 50/60Hz



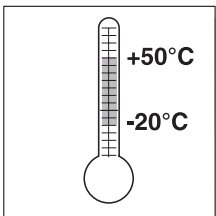
2000mm



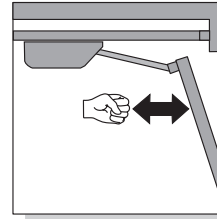
**18,0kg
18,5kg
19,0kg**



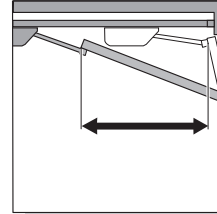
24V, 21W, BA 15s



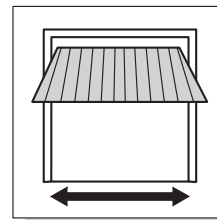
-20°C - +50°C



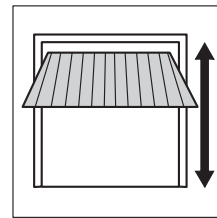
**max. 550N
max. 800N
max. 1100N**



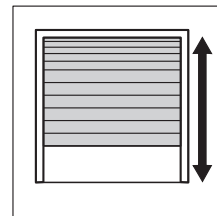
2600mm



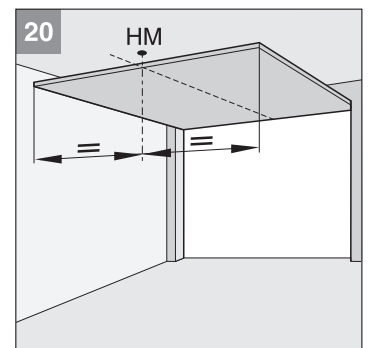
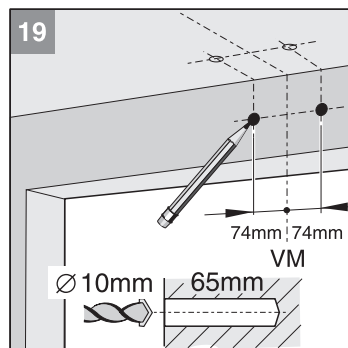
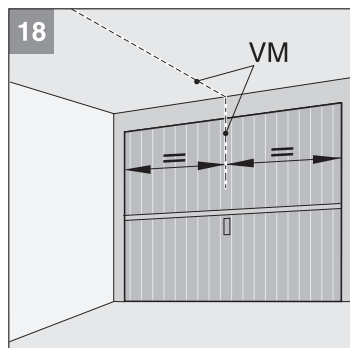
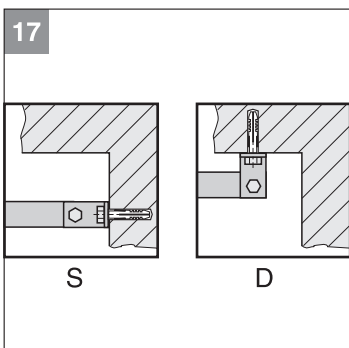
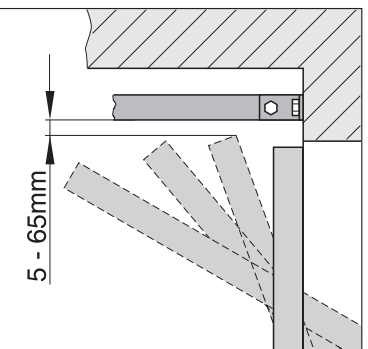
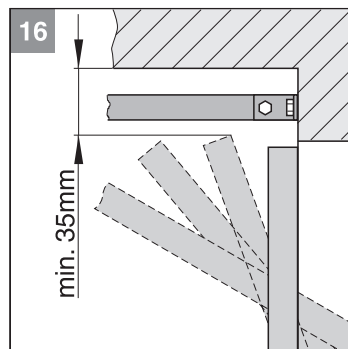
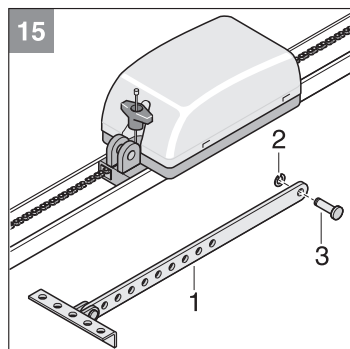
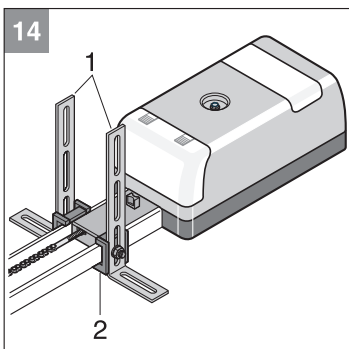
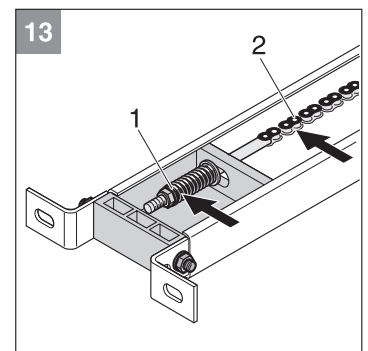
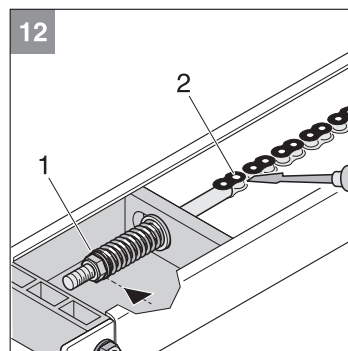
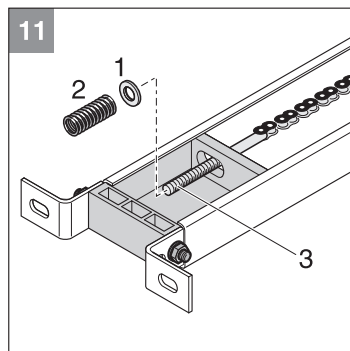
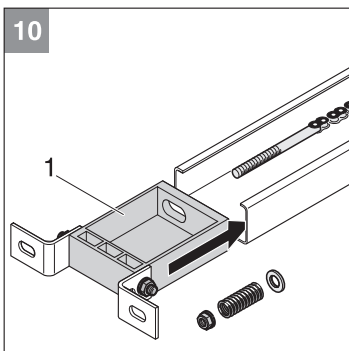
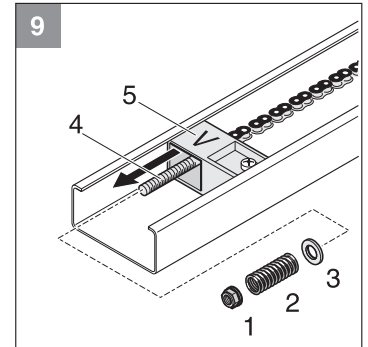
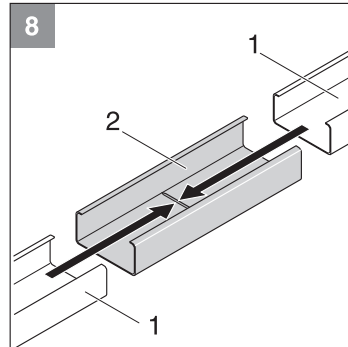
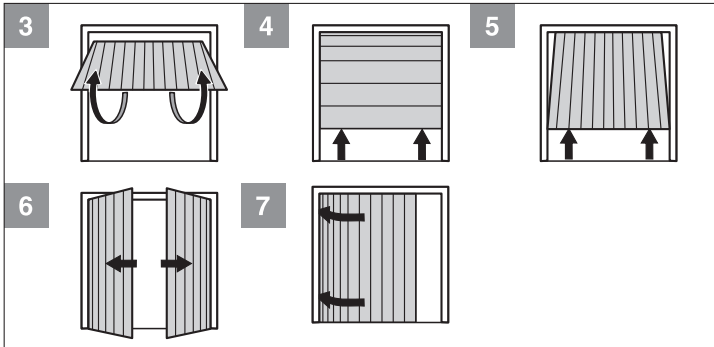
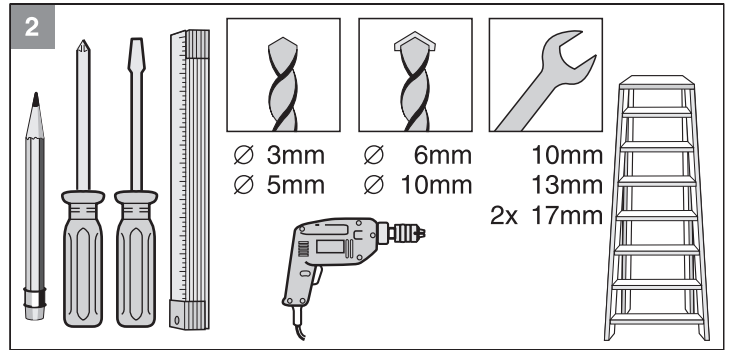
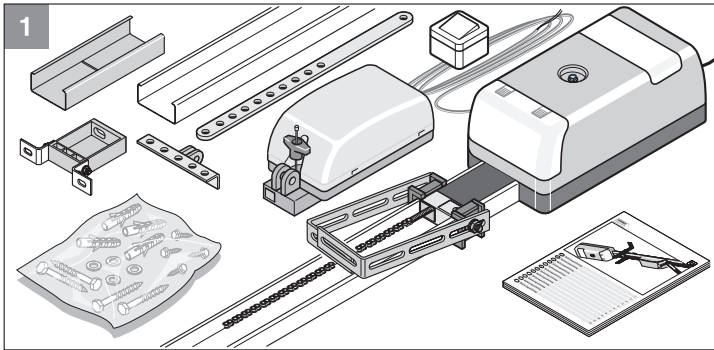
**max. 4000mm
max. 6000mm
max. 8000mm**



max. 2600mm



max. 2350mm



Contents

Foreword	17
Symbols	17
Safety Instructions	17
Normal Use	18
Technical Data	18
EU Manufacturers' Declaration	18
Rating Plate	18
Installation	19
marathon SL Control Unit	22
Radio Receiver 868.8 MHz	24
Initial Operation	25
Additional Functions	26
Operation and Handling	28
Accessories	29
Maintenance and Care	30
Disassembly	31
Warranty and After-sales Service	31
Troubleshooting	31

Foreword

Our new garage door drive mechanisms 'marathon 550 SL' 'marathon 800 SL' and 'marathon 1100 SL' combine reliability with innovation. The new 'marathon 550 SL' range replaces the current 'marathon S 550 N', 'marathon S 800 N' and 'marathon S 1100 N' models whilst offering new functions and connecting options (e.g. soft run, 2nd button, interface for TorMinal, etc.).

As the connection set-up of the 'marathon 550 SL' control unit is **not** compatible with the current 'marathon' models, the latter can only be upgraded to 'marathon SL' models by replacing the control unit as a whole or converting the control unit housing.

Furthermore, the new drive is supplied with our new radio control system based on a frequency of 868.8 MHz, which offers enhanced security standards. The system features rolling code technology, where the code is changed for each new radio command, thus offering optimum security.

Symbols



Indicates a potential risk. Failure to follow instructions may result in serious injuries.



Information, useful advice.

A.1

(1)

Refers to the relevant illustration in the introduction or main text.

Safety Instructions

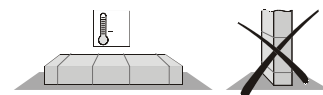
General Safety Instructions

- These Installation and Operating Instructions (MBA) must be read, understood and observed by the person installing, operating or maintaining the drive mechanism.
- The manufacturer accepts no liability for damage or malfunctions caused by failure to follow these Operating Instructions.
- Make sure that these Operating Instructions are readily accessible in the garage.
- Observe and comply with the locally applicable accident prevention regulations and EC standards.

- Only install the drive mechanism to correctly aligned and weight-balanced doors. An incorrectly aligned door could cause serious injury or damage to the drive mechanism.
- Doors that operate automatically by means of the drive mechanism must comply with the following standards: EN 12604, EN 12605.
- Installation, connection and initial operation of the drive mechanism may only be carried out by qualified specialists.
- Always disconnect the drive mechanism from the power supply before carrying out any work.
- Only use the manufacturer's original spare parts, accessories and fastening materials.

Storage Tips

- The drive mechanism may only be stored indoors, in a dry, sealed environment at an ambient temperature of between -20°C and +50°C.
- The drive mechanism should be stored horizontally.



Operation-related Safety Instructions

- The drive mechanism may only be operated if a risk-free force tolerance has been set. The force tolerance must be set as low as is required to ensure that the door's closing force does not constitute a danger (see 'Force Setting' section).
- Keep your hands clear of any moving door or any moving parts.
- Keep children, disabled persons and animals away from the door.
- Only drive into and out of the garage when the door is fully opened.
- Closing edges and workings of the door pose risk of injury.

Safety Instructions for Radio-controlled Operation

- The radio remote control may only be used for equipment and systems in which defective remote operation of the transmitter or receiver does not constitute a risk to people, animals or objects, or in cases where this risk is eliminated by means of additional safety facilities.
- Use of the radio remote control in conjunction with equipment or systems subject to an enhanced risk of accident (e.g. crane systems) is prohibited!
- To ensure safe operation, local safety regulations relevant to the equipment concerned must be observed! Information regarding this can be obtained from electricity suppliers, the VDE and employers' liability insurance associations.
- The user must be made aware of the fact that the remote control of equipment with accident risk potential may only occur, if at all, when the equipment concerned is clearly visible.
- Radio remote control may only be used if movement of the door can be supervised and there are no persons or objects in the area of movement.
- Store the manual remote control such that there is no risk of it being accidentally operated by, for instance, children or animals.

Safety Instructions for Authorised Radio-controlled Operation

- The operator of this radio-controlled equipment is in no way protected from interference from other telecommunications systems and facilities (e.g. other radio-controlled equipment that is licensed to operate at the same frequency range). Should serious interference be encountered, please contact your nearest telecommunications office with interference measuring facilities (radio signal localisation)!
- Under no circumstances may this radio-controlled equipment be linked to any other telecommunications system without the express authorisation of the relevant licensing authorities.
- Do not use the manually-operated remote control near locations or installations that are susceptible to radio interference (airports, hospitals).

Normal Use



Important to note!

If the drive mechanism is installed by a company qualified to do so, the company concerned must carry out an acceptance/transfer test and fit a rating plate to the door. A copy of the test protocol and the drive mechanism's Installation and Operation Instructions should be kept by the operator.

- Doors that operate automatically by means of the drive mechanism must comply with the following standards: EN 12604, EN 12605.
- The drive mechanism is intended for the exclusive purpose of opening and closing the doors. Any other use does not constitute normal use.
- The manufacturer accepts no liability for damage resulting from use other than normal use. The user accepts sole responsibility for any risk thereby incurred.
- The drive mechanism may only be used if it is in a technically perfect condition and in compliance with these Installation and Operating Instructions (MBA) particularly regarding correct and responsible usage.
- Any defects that may impair the safe operation of the equipment should be eliminated without delay.
- The gate wings must be stable and warp-proof, i.e. they should not bend or warp during opening or closing operations.
- The drive mechanism is unable to compensate for any defects in the door or for its incorrect installation.
- Only use the drive mechanism in a dry, indoor environment where there is no risk of explosion.
- The ambient temperature for drive mechanism operation and storage is between -20°C and +50°C. Should extreme weather conditions prevail, consult your local stockist for advice.

Maximum door dimensions:

	550 SL	800 SL	1100 SL
- max. width:	3500 mm	6000 mm	8000 mm
- max. height of canopy doors:	2600 mm	2600 mm	2600 mm
- max. height of vertical sectional doors:	2350 mm	2350 mm	2350 mm

With taller doors, corresponding rail extensions need to be installed - see 'Accessories' section.

- duty cycle:	40 %	40 %	40 %
---------------	------	------	------

Any other or non-compliant usage is deemed to be incorrect. The manufacturer is not liable for any damage occurring as a result. The user is responsible in such cases. Any warranty entitlement lapses.

Technical Data

marathon	550 SL	800 SL	1100 SL	
Rated voltage:	230	230	230	V/AC
Rated frequency:	50/60	50/60	50/60	Hz
Maximum traction and pressure force:	550	800	1100	N
Rated traction:	165	240	330	N
Rated current consumption:	0,7	0,8	0,9	A
Rated power consumption:	150	160	190	W
Maximum speed:	180	130	130	mm/s
Power consumption (stand-by):	~ 2	~ 2	~ 2	W
Operating temp. Range:	-20 - +50	-20 - +50	-20 - +50	°C
Weight:	18	18,5	19	kg
Workplace-specific emission value < 75 dBA - drive only				

EU Manufacturers' Declaration

Messrs.

SOMMER Antriebs- und Funktechnik GmbH
Hans-Böckler-Straße 21-27
D-73230 Kirchheim/Teck

hereby declares that the machine component designated below is intended to be fitted into a gate mechanism and that commissioning is prohibited until it has been ascertained that the installation in which this equipment is to be fitted complies with all the relevant provisions of the applicable EU directives.

Designation of machine component:

- marathon 550 SL garage door drive mechanism
- marathon 800 SL garage door drive mechanism
- marathon 1100 SL garage door drive mechanism

The relevant directives and standards are as follows:

- Machine Directive 98/37/EG
- Low Voltage Directive 73/23/EEC, Machine Directive 89/392/EEC
- EU Electromagnetic Compatibility Directive 89/336/EEC

Kirchheim, 01.07.2001

Uwe Sommer
Managing Director

Rating Plate

The rating plate is located on the cover of the control unit housing.

The following is an example of a rating plate:

Model :	marathon 550 SL, FM 868 MHz
Manufacturer:	SOMMER Antriebs- und Funktechnik GmbH D-73230 Kirchheim/Teck
Article no.:	4200V000
Year built:	07/2001
Serial no.:	?
230V~ 50/60 Hz	
150W/0.7A at 165N rated traction; max. 550N traction and pressure force	
Operating temp. Range -20°C - +50°C	
After-run distance <30mm; ED: 40% S3	
Nur für trockene Räume Use only in dry rooms Seulement pour les chamdres sèches	

Installation

1 Supplied Parts and Components

C-rails, chain with bogie unit and drive shaft
 Control unit in housing, push-button cable, mains cable
 Connecting element
 Lintel fitting
 Ceiling mounting
 Installation accessories in bag comprising:
 1 push-button
 5 hexagon-head, self-tapping screws 6.5 x 19
 4 wood screws 8 x 60
 4 plugs S10
 4 plain washers 8.4
 Installation and Operating Instructions

2 Tools Required

See Figure

Safety Tips

- Installation, connection and initial operation of the drive mechanism may only be carried out by qualified specialists.
- Do not operate the door when people, animals and/or objects are in its area of movement.
- Keep children, disabled persons and animals away from the door.
- Door installation should be carried out by two persons, thus ensuring safe and fast completion of the work involved.
- Safety goggles should be worn when drilling the mounting holes.
- Cover the drive mechanism up when drilling to ensure it does not get soiled.

Before Installation



Very important to note!

The walls and ceiling must be firm and stable. Only fit the drive mechanism to a correctly aligned door. A door that has not been aligned correctly can cause serious injuries.

- Doors that operate automatically by means of the drive mechanism must comply with the following standards: EN 12604, EN 12605.
- Doors must be stable because they are subjected to high tensile and compressive forces. Light doors made of plastic or aluminium must be strengthened before installation if necessary. Ask your specialist retailer for advice.
- Remove door locking system or disable same.
- Check that the door runs easily.
- The door must be balanced.

Test :

Manually open the door half-way. It must stay still in this position. If the door moves downwards or upwards, mechanically readjust it. Ask your specialist retailer for advice.

- If the drive mechanism requires a rail extension to be installed, it is essential that the second ceiling mounting be fitted for this purpose.
- Check the clearance between the door's highest up-position (THP, see fig. 16) and the ceiling. The minimum clearance is 35 mm and the maximum 100 mm, whereby the drive arm can only be at an angle of max. 30°. If the clearance is less than is permissible, the drive mechanism has to be moved back and an extended drive rail fitted. Ask your local stockist for advice.

Door Types and Special Accessories*

* Accessories are not included in the delivery specification.

Door type	Accessories
3 Up-and over, Tracked door	No special accessories required
4 Vertical sectional door with single runner rail	Vertical sectional door fitting with boomerang *
4 Vertical sectional door with double runner rail	Vertical sectional door fitting without boomerang *
4 Shutter-type door	No accessories required
5 Canopy and non-protuding door	Bow arm convertor system*
6 Swing door	Swing-door fitting *
7 Side-opening sectional door	Please consult specialist retailer

Installation Tips

- Check that all the parts have been supplied before you start installation work in order to save time and unnecessary work if a part is missing.
- The drive mechanism can be installed to one side of the door if it cannot be installed at the centre. It is important to note that the door does not bend as a result and jam in the guide rails.

Check

Open and close the door several times by hand holding it at the point where you intend fitting the drive mechanism. If the door can be moved in this way without difficulty (in compliance with the above forces), then the drive mechanism can be fitted at this point.

- Emergency Release

In the case of a garage without a separate entrance (e.g. slip door), the emergency release of the drive mechanism must be operable from the outside. To this end, you should fit a Bowden wire or a release lock, accessible from the outside. See 'Accessories' section.

- Door lock

With doors supplied without the current door locking system, opening approximately 50 mm by hand, this should be replaced by a spring latch. This spring latch can be connected across the locking set to the drive, so that when the door opens the spring latch locks first and then the drive starts to open the door. Spring latches can be built onto the left, right or middle of the door. Ask your dealer for details.

- Canopy doors

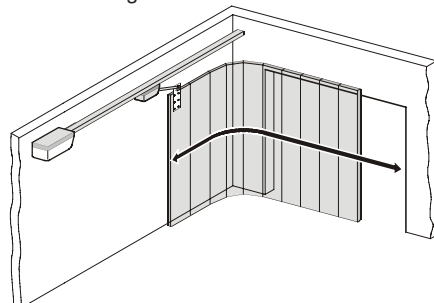
As the mechanical lock of a door with a drive mechanism has to be dismantled or activated, it is possible to open the door manually up to approx. 50mm depending on the door construction.

In order to accommodate this, spring latches that lock the door in addition to the drive can be mounted. These spring latches are connected to the drive via a locking set in order to first unlock the spring latches before a drive opens the door when opening the door.

- Installation should be carried out quickly and safely by two persons

- All-round or side-sectional door

The polarity of wires 12 + 13 of drives that have to push one the above-mentioned doors open has to be changed. See marathon SL Control Unit fig. 29.1 terminal 12 + 13.



Pre-assembling the Drive Mechanism

- Remove the drive mechanism from its packaging.

i **Dispose of the packaging correctly in accordance with local requirements.**

- 8** • Slot two C-rails (1) into connecting element (2) and push together as far as they will go.
- 9** • Remove nut (1), spring (2) and plain washer (3).
- Push securing bolt (4) through opening in cut-off buffer (3).
- 10** • Push in lintel fitting (1).
- 11** • Push plain washer (1) and spring (2) on to securing bolt (3).
- 12** • Tighten nut (1) as far as mark. Hold chain back with screwdriver to prevent movement.

i **Do not press against chain joint (2)!**

- 13** • Move securing bolt (1) and chain with chain case (2) outwards as far as stop.
- 14** • Unscrew two steel angle irons with length adjustment holes (1) and screw onto ceiling bracket (2) as shown.
- 15** • Dismantle drive shaft (1):
pull retainer (2) out
remove bolt (3).

Installation of Drive Mechanism

- 16** • Determine door's highest up-position (THP):
Open door and measure smallest clearance (min. 35 mm) between top edge of door and ceiling. The distance between the highest up-position and the bottom edge of the C-rails has to be min. 5 mm and may be max. 65 mm, whereas the drive arm can be at an angle of max. 30°!
- 17** • The drive mechanism can be mounted on lintel (S) or ceiling (D).
- 18** • Measure front centre point (VM) of door and mark on door and on lintel or ceiling.
- 19** • Make a mark 74 mm to right and left of centre of door (VM) at same height on lintel or ceiling (see fig. 16).
• Drill two holes (Ø 10 x 65 mm).

i **Caution! Wear safety goggles when drilling!**
Check thickness of ceiling, particularly with prefabricated garages!

- 20** • Open door. Transfer door centre mark (HM) on to ceiling. Close door.
- 21** • Insert plug (1). Lift up drive mechanism (2) at front. Secure lintel fitting (3) at front with two screws (4) and plain washers (5).

i **Caution!**
Protect control unit housing (6) from damage!

- 22** • Lift up drive mechanism at back.
• Align ceiling bracket (1). Its final location ought to be in area B between 0 and 600 mm.



Use a non-slip, stable stepladder!

- 23** • Align drive mechanism horizontally to rear centre of door (HM). Mark position of holes. Drill two holes (Ø 10 x 65 mm deep).

i **Caution! Wear safety goggles when drilling!**
Check thickness of ceiling, particularly with prefabricated garages!

- Insert plug (1). Fit two screws (2) with plain washers (3). Tighten screws securely.
- Align C-rail (4) at correct height. If necessary, move screws (5). Tighten screws (5).

- 24** • Mount drive shaft (1):
Insert bolt (2) and push on retainer (3).

- 25** • Pull once on emergency release wire (N), thus disengaging bogie unit (1). Tighten screw (8) on lintel fitting.
- Use drive shaft (2) to push bogie unit (1) as far forward as possible (3). If necessary, release cut-off buffer (4).
- Align door fitting bracket (5) to door centre and mark out 5 holes. Drill 5 holes (Ø 5 mm).

i **Use screws that are appropriate to the door material.**
Wear safety goggles when drilling!

- Insert 5 hexagon-head screws (6) and tighten securely.
- Release cut-off buffer (4) and push right up to bogie unit (7).
- Tighten cut-off buffer screw (4) securely.

- 26** • Release rear cut-off buffer (1) and push right back to stop (2). Open door (3) by hand.

i **Shorten projecting ceiling brackets (4).**

- Push cut-off buffer (1) right up to bogie unit (5). Securely tighten screw on cut-off buffer (1).

Installing Slip-door Facility or Release Lock

- If your garage door is fitted with a slip door but no slip-door safety facility, you need to have one installed (see 'Accessories' instructions).
- If your door has no slip door and your garage has no separate entrance, install a release lock or Bowden wire to facilitate drive mechanism release from the outside (see 'Accessories' instructions).

Fitting and Connecting Push-button



Very important to note!

When operating the push-button, the user should not stand in the door's area of movement and must have a clear view of the door.

Never run the push-button cable along a power cable as this can cause the control unit to malfunction. The push-button cable is supplied connected to the control unit.

- 27** • Install push-button (1) in an appropriate, easily accessible location inside the garage. Minimum height from floor - 1.6 m.

i **Do not install the push-button in the door's area of movement.**

- Install connection cable (2) inside the garage.
Connect end of cable to push-button (1).

i **Useful Tip!**
The Funkody, a radio-operated interior switch and a key switch are other possible pulse generators that could be used. No connecting cable to the drive mechanism need be fitted with the Funkody and the radio-operated interior switch. Contact your local stockist for advice.

Electrical Connections

- The supplied power cable must not be shortened or extended.
- The voltage of the power source must correspond to that indicated on the drive mechanism's rating plate.
- All apparatus that is externally connected must have contacts with safety separation from the mains supply in accordance with IEC364-4-41, Sub-clause 411.1.3.1
- Live parts on the drive mechanism (energised parts e.g. C-rail) must not be connected to earth or with any active parts or earthing of any other circuits.
- When installing the conductors of external apparatus, observe the requirements in IEC 364-4-41, Sub-clause 411.1.3.2

Installing the Socket-outlet

Tip!

The power socket may only be installed by a qualified electrician.

- 28** • Install socket (1) on ceiling at a distance of approx. 0.5 metres to the control unit housing.
- Install and connect the connection cable from the socket-outlet to the mains power supply. **Do not plug the connector into the socket-outlet yet!**



Observe the applicable VDE Regulations!

marathon SL Control Unit

29.1 24-pin Socket Unit

Maximum cable cross-section: 1.5 mm². Various accessories may be connected to the socket unit.

Terminal : Designation

1	Connection of external aerial only at 40 MHz.
2 + 3	Push-button 1: supplied with connected interior push-button
4 + 5	Push-button 2: supplied as vacant
6 + 7	Safety connection 1 for e.g. light barrier or 8.2 Kohm - supplied with jumper
8 + 9	Safety connection 1 for e.g. light barrier This safety connection only reacts in a door OPEN direction - e.g. as safety mechanism - supplied with jumper
10 + 11	Non-regulated 24 V dc output (max. 34 V dc), max.1 A (supplying e.g. a light barrier) Terminal 10 = 24 V dc Terminal 11 = earth
12	Chain
13	C-rail
14 + 15	Secondary transformer 24 V ac
16 + 17	Non-regulated 24 V dc warning light connection (max. 34 V dc), 25 watt, max. 1A for additional external warning light
18 + 19	Non-regulated 24 V dc light/traffic light connection (max. 34 V dc), 21 watt, max. 1 A supplied with connected interior lighting
20 + 21	12 V output, max. 0.1 A (supplying e.g. light barrier) Terminal 20 = 12 V dc Terminal 21 = earth
22	Vacant (coding plug) - to ensure the control unit cannot be incorrectly installed, which would result in its immediate destruction.
23 + 24	Floating relay output, max. 230 V ac at 10 A.

29.2 Fuse F1

Protection of warning light connection (29.1, terminals 16 + 17) by means of 1-A slow-blow fuse.

29.3 Fuse F2

Protection of light/traffic light connection (29.1, terminals 18 + 19) by means of 1-A slow-blow fuse.
Supplied with connected interior lighting (24 volt, 21 watt).

29.4 Fuse F3

Protection of 24-V output (29.1, terminals 10 + 11) by means of 1-A slow-blow fuse.

29.5 Connecting external aerial

An external aerial can be connected here in the event of the reception quality being unsatisfactory with the internal one.

30 Radio Receiver (Code)

See '868.8 MHz Radio Receiver ' section

29.6 Push-button 2 (Start 2)

If pressed at same time as push-button 1 (29.7), deletes saved force values.

See DIL switches 7 + 8 for further functions.

29.7 Push-button 1 (Start 1)

If pressed at same time as push-button 2 (29.6), deletes saved force values.

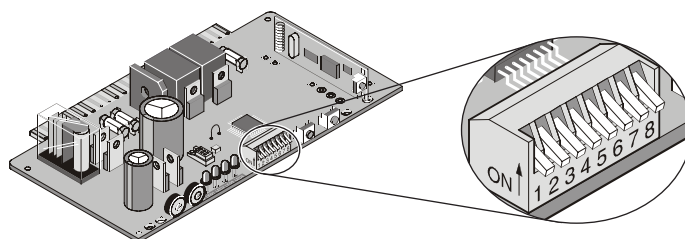
29.8 DIL Switches 1-8 (Options 1 - 8)

All DIL switches are supplied in the OFF position.



Important to note!

Disconnect control unit from power supply before operating DIL switches. DIL switches have to be reprogrammed when control unit has been reconnected to power supply.



DIL switch	Position	Function/Reaction
Safety connection: 1 Terminals 6 + 7		
Behaviour drive at door OPEN (e.g. someone crosses light barrier)		
1	OFF	No reaction when door opens
	ON	Drive mechanism stops when door opens
Safety connection: 1 Terminals 6 + 7		
Selection of functionality as normally closed contact or as 8.2 KOhm		
2	OFF	Normally closed contact (e.g. light barrier)
	ON	8.2 KOhm (no function in door OPEN direction)
Safety connection: 1 Terminals 6 + 7		
Behaviour of drive at door CLOSED (e.g. someone crosses light barrier)		
3	OFF	Drive mechanism stops when door closes and opens door a little
	ON	Drive mechanism stops when door closes and opens door completely
Automatic closing: door closes 5 seconds after activation of light barrier (connected to Safety1)		
4	OFF	Deactivated
	ON	Activated
Early warning period for warning light connection - terminals 16 + 17		
5	OFF	Early warning period - 0 sec.
	ON	Early warning period - 3 sec. - warning light flashes
Back jump (only door CLOSED)		
6	OFF	Deactivated
	ON	Activated
Defined opening and closing		
7	OFF	Pulse sequence for 1st channel operation Push-button/Radio channel 1 + 2: open - stop - close - stop - open - stop - close ...
	ON	Pulse sequence for 2nd channel operation Push-button/Radio channel 1: open - stop - open ... Push-button/Radio channel 2: close - stop - close ...
Partial opening		
8	OFF	Partial opening deactivated
	ON	Partial opening activated - push-button/radio channel 1 = open - stop - close ... - push-button/radio channel 1 = partial opening DIL switch 7 deactivated

29.9 LED 4 (Start)

Indicates whether an OPEN or CLOSE command has been given via a push-button or radio.

29.10 LED 3 (Safety)

Indicates whether a safety connection (Safety 1 or 2) has been tripped.

29.11 LED 2 (Warning Light)

Indicates given control unit status:

LED flashes:

- no force value programmed
- in normal operation same behaviour as a connected warning light, see 29.1 terminals 16 + 17

LED illuminates:

- red light in automatic closing mode.

29.12 LED 1 (Power)

Indicates whether 24-V power supply is available.

29.13 Potentiometer (Auto Time)

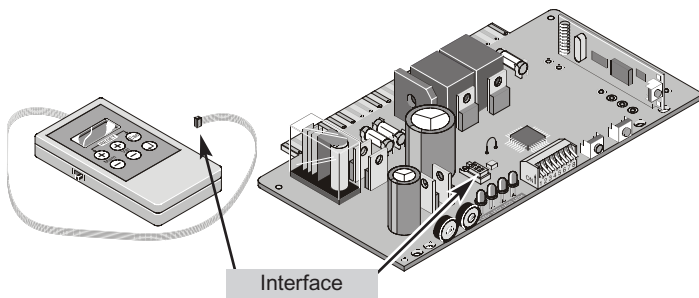
Time-setting potentiometer supplied in maximum anti-clockwise position and as such deactivated.

29.14 Potentiometer (Force)

See 'Setting Force Tolerance' section for setting details.

29.15 TorMinal Interface

Further functions can be activated via TorMinal. See 'TorMinal Operating Instructions' for more details.

**29.16 Coding Hole**

To ensure the TorMinal connection cable is correctly connected at all times.

29.17 Jumper

Should the drive mechanism need to be operated without a 'soft run' function or if no TorMinal is available, the 'soft run' function can be deactivated by disconnecting the jumper.

**Important to note!**

The 'soft run' function can no longer be activated via the TorMinal once the jumper has been disconnected.

29.18 Relay contact

Floating relay output on terminals 23 + 24 (29.1).

This can be used to control a stairway lighting system that automatically switches the lights on and off. Supplied in 'Pulse' mode.

Radio Receiver 868.8 MHz

General Information

SOMMER's new radio control system works at a frequency of 868.8 MHz, so that code transfer occurs from the manual remote control to the radio receiver. Each receiver can store up to 112 different codes. Each manual remote control is allocated a factory-set radio code, whereby each push-button or combination of buttons has its own code.

Example 1:

When setting various manual remote controls into a given receiver, only push-button 1 should be programmed on channel 1, thus enabling 112 different manual remote controls to be learnt.

Example 2:

When setting various manual remote controls into a given receiver, programming push-button 1 on channel 1 and push-button 2 on channel 2 means only 56 different manual remote controls can transfer their codes to the receiver concerned. If the user attempts to set more than 112 codes into a given receiver, all the LEDs start to flash.

Safety Instructions

- To ensure safe operation, local safety regulations relevant to the equipment concerned must be observed! Information regarding this can be obtained from electricity suppliers, the VDE and employers' liability insurance associations.
- The operator of this radio-controlled equipment is in no way protected from interference from other telecommunications systems and facilities (e.g. other radio-controlled equipment that is licensed to operate at the same frequency range).
- Try replacing the batteries should reception problems be encountered.

Radio Receiver

- 31** - Setting button (1):
Selects various operating modes for the radio receiver: learning mode, delete mode, normal mode.
- Internal aerial (2)
 - LEDs (3)
indicate which channel has been selected and which operating mode is active.
 - Radio channel 1 (3.1)
 - Radio channel 2 (3.2)
 - External aerial (4)
An external aerial can be fitted if the possible range with the internal aerial is insufficient. See Accessories.

Code Transfer - Manual Remote Control to Radio Receiver

- 31** • Press setting button (1) on radio receiver
- press 1x for channel 1; LED (3.1) lights up
 - press 2x for channel 2; LED (3.2) lights up
 - If no radio code is transferred within 10 seconds, the receiver switches back to normal operating mode.
 - Interrupting learning mode: press setting button (1) as often as required to put out all LEDs
 - Press required button on the manual remote control (5). The manual remote control transfers the code to the radio receiver.
 - The LED which goes out, depends on which channel has been selected.

Deleting a Manual Remote Control Button from the Radio Receiver

If a user of a multi-user garage facility moves house and wants to take his manual remote control with him, then all the codes of the given user's manual remote control have to be deleted from the radio receiver.

Very important to note!

For security reasons, each manual remote control button and/or combination of buttons should be deleted!

- 31** • Press setting button (1) and keep depressed for 5 seconds until an LED starts to flash (any LED)
- Release setting button (1) - radio receiver is in delete mode.
 - Press push-button on the manual remote control, the one whose code is required to be deleted on the radio receiver - LED goes out - deletion process complete.
 - Repeat procedure for all push-buttons and combination of buttons.

Deleting a Channel from the Radio Receiver

- 31** • Press setting button (1) on the radio receiver and keep depressed
- press 1x for channel 1; LED(3. 1) lights up
 - press 2x for channel 2; LED (3.2) lights up
 - The LED that lights up depends on which channel has been selected. LED flashes for 5 seconds. After a further 15 seconds LED lights up again; the channel has now been deleted.
 - Release setting button (1) - deletion process complete.

Deleting All Codes on the Radio Receiver

If a manual remote control is lost, then for security reasons all channels on the receiver have to be deleted! After this has been done, all the manual remote controls have to be re-set into the receiver.

- 31** • Press setting button (1) on the radio receiver and keep depressed.
- LED shines for 5 seconds. After a further 15 seconds the LED starts to flash.
 - After 25 seconds all the LEDs start to flash; all the channels have now been deleted.
 - Release teaching key (1); the LEDs go out, a sign that the deletion process has been completed.

Connecting an External Aerial (marathon)

- An external aerial can be fitted if the possible range with the radio receiver's internal aerial is insufficient.
 - The aerial cable must not exert any mechanical load on the radio receiver. Fit strain relief.
- 31** • Remove jumper (4).
- Connect external aerial (5).

Troubleshooting

All LEDs are flashing - the unit is attempting to occupy more than 112 memory slots on the radio receiver.

LED lights up - learning mode. Radio receiver is awaiting a radio code from a manual remote control.

Initial Operation

Safety Instructions



Very important to note!

The force setting is relevant to the system's safety and must therefore be carried out with due care and attention. An excessively high force setting can injure people and/or animals and damage property.

Select as low a force setting as possible to ensure that obstacles are identified in a fast, safe manner.

- Keep your hands clear of a door in operation and any moving parts.
- Keep children, disabled persons and animals away from the door.
- Only drive into and out of the garage when the door is fully opened.
- Store the manual remote control such that there is no risk of it being accidentally operated, by for instance, children or animals.

Setting Correct Length of Travel

The distance over which the drive mechanism moves the door can be increased/reduced by using the cut-out buffer.

Check that the door opens and closes completely. If it does not, its travel must be adjusted.

- 25** • Loosen cut-out buffer (4), move it and tighten it until the door closes. Check the final travel position by opening and closing the door. If necessary, repeat this process until the door closes completely.
- 26** • Loosen cut-out buffer (1), move it and tighten it until the door opens. Check the final travel position by closing and opening the door. If necessary, repeat this process until the door opens completely.

Programming Force Values

The control unit has an automatic force setting. When the door opens or closes, the control unit automatically reads in the required force and memorises it.

- Connect mains plug

33 When filament lamp (3) is not flashing, delete saved force values:

- Press push-buttons (3 + 4) and keep depressed until filament lamp (3) goes out.
 - Release push-buttons (1 + 2)
 - Force values deleted.

Carry out procedure 2x:

- Close door
- 27** • Press push-button (1) 1x
Door opens as far as limit switch
- 33** • Lamp (3) and LED (29.11) start to flash
- 27** • Press push-button (1) 1x
Door closes as far as limit switch
- 33** • Filament lamp (3) and LED (29.11) flash
- Lamp goes out, force values have been memorised.



Important to note!

An additional force tolerance has to be set if, after the force values have been set, the drive mechanism does not reach its final travel positions.

Do not set any additional force tolerance if the drive mechanism reaches its final travel positions correctly.

Checking Force Setting

When the force is correctly set, movement of the door in both directions can be stopped by exerting slight hand pressure.

For each movement of the door, the control unit checks the force values it has memorised against those required and automatically adjusts the values accordingly.

The following measures can be taken if the force values set for opening and closing the door are too high:

- reduce the force tolerance
- delete the force values by initiating a control reset and set the new values
- check door

Setting Correct Force Tolerance



Check force adjustment on a regular basis, every year at least, to ensure correct functioning. See 'Maintenance and Care' section.

If the force is insufficient to allow the full opening or closing of the door, the tolerance can be increased by turning the adjustment on the potentiometer in a clockwise direction.

The maximum force value allowed is automatically made up of the force read in together with an additional force tolerance set via the potentiometer (29.14). The potentiometer's furthest anticlockwise setting (-) is equivalent to the least force tolerance, and its furthest clockwise setting the largest force tolerance. If the setting is adjusted during opening or closing door, the new setting is read in by the control unit when the door is next re-opened or closed.

Once the force tolerance has been set, you may have to re-adjust the door OPEN and CLOSED final travel positions if the required position is not reached.

Procedure:

- Close door.
- 25** • Engage bogie unit:
pull once on the emergency release wire (N) if bogie unit disengages.
- 32** • Remove control unit housing lid (1).
- 34** • Turn potentiometer adjustment (1) as far anticlockwise as possible (4).

If filament lamp (3) does not flash - delete set force values:

- 33** • Press push-buttons (3 + 4) and keep depressed until filament lamp (3) goes out.
- Release push-buttons (1 + 2).
 - Force values deleted.

If filament lamp (3) flashes - read in force values:

- 27** • Press push-button (1) 1x
Door opens to limit switch without stopping
- Press push-button (1) 1x
Door closes to limit switch without stopping
 - Press push-button (1) 1x
Door opens to limit switch without stopping
 - Press push-button (1) 1x
Door closes to limit switch without stopping
 - Force values for opening and closing have thus been taught. Filament lamp lights up.

Test run:

- 27** • Press push-button (1) 1x
Door opens to limit switch without stopping
- Press push-button (1) 1x
Door closes to limit switch without stopping
 - The force value has to be increased if the door does not reach its final travel position providing the travel length has been set correctly.
 - Turn potentiometer (1) approx. 10 degrees in a clockwise direction (5).

i For your own safety, select as low a force tolerance as possible to ensure that obstacles are identified in a fast, safe manner.

- Repeat test runs until the door reaches the UP and DOWN final travel positions.

i Check door if drive mechanism is unable to open or close door completely despite maximum force tolerance setting (potentiometer 29.14 turned as far clockwise as possible).

- 32** • Fit control unit housing lid (1).

Code Transfer - Manual Remote Control to Drive Mechanism

i Important to note!
New radio frequency of 868.8 MHz; the control unit is set the codes from the manual remote control.

The drive mechanism must remain switched on whilst the radio codes are being learnt.

- 31** • Press setting button (1) on radio receiver
- press 1x for channel 1; LED (3.1) lights up
 - press 2x for channel 2; LED (3.2) lights up
 - If no radio code is transmitted within 10 seconds, the receiver switches back to normal operating mode.
 - Interrupting setting mode: press setting button (1) as often as required to put out all LEDs
 - Press required button on the manual remote control (5). The manual remote control transfers the code to the radio receiver.
 - The LED which goes out, depends on which channel has been selected.

i See 'Radio Receiver 868.8 MHz' section for details of deleting radio codes

Additional Functions

Early Warning Period (DIL switch 5)

When the push-button is pressed or the manual remote control is operated, the warning light flashes for 3 seconds before the drive mechanism starts up. If the push-button is pressed again or the manual remote control is operated during the 3 seconds, the early warning period is ended prematurely.

Back Jump (DIL switch 6)

This feature serves the purpose of supporting door and drive mechanism operation. The drive mechanism moves briefly back in a door OPEN direction once it has reached the door CLOSED final travel position, thus taking some of the strain off the other equipment.

Partial Opening (DIL switch 8)

This function opens the door either completely or partially, depending on the given setting.

Ideas for use: garage ventilation, opening of side-opening door for personal access, to name but a few. Partial opening functionality can be used by using two push-buttons or the manual remote control.

Partial opening using 2 push buttons

Mount an additional push-button and connect as 'Push-button 2' to terminals 4 + 5.

Push-button 1 always opens door fully. If the door has been partially opened by pressing push-button 2, it can be fully opened by pressing push-button 1.

Push-button 2 only carries out partial opening when the door is CLOSED. If the door is already fully OPEN or has been partially opened via push-button 2, it can be closed by again pressing push-button 2.

Procedure

1. Close door.
2. Set DIL switch 8 to ON, thus activating partial opening functionality
 - always leave DIL switch 8 in ON position; the OFF position automatically deletes the partial opening function that has been set.
3. Press push-button 2 (opens door from CLOSED final travel position)
 - door opens until such time as push-button 2 is pressed again or OPEN final travel position has been reached.
4. Press push-button 2 when the desired position has been reached.
5. Close door by pressing push-button 2.

The required partial opening adjustment has thus been set. Press push-button 2 to open door to set position.

Set DIL switch 8 to OFF position to delete partial opening setting.

Partial opening via manual remote control (2-channel operation)

Program button 1 on manual remote control to radio channel 1 and push-button 2 to radio channel 2.

Radio channel 1 always has the same function as push-button 1.

Radio channel 2 always has the same function as push-button 2.

Defined Opening and Closing (DIL switch 7)

Push-button/radio channel 1 opens and push-button/radio channel 2 closes the door. 2-channel operation can also be used either via the relevant push-buttons or via the manual remote control.

Settings:

- DIL switch 7 ON
- DIL switch 8 OFF
- a 2nd push-button on the manual remote control has to be read on to radio channel 2.

Relay Output (Terminals 23 + 24)

Each time the drive mechanism starts up, a pulse is sent to the relay outlet. This could be used to switch on stairway lighting via an automatic light-switching system. Further settings only possible Via TorMinal.

Automatic Close Mode (Potentiometer 29.13)



Important to note!

Installation of a light barrier or safety contact strip is advisable. An additional light barrier can be connected to act as an extra safety facility.

In automatic CLOSE mode, the door is automatically closed after the OPEN period set via potentiometer (29.13) has elapsed. Use of this mode means the door can only be opened via a push-button or manual remote control, but not closed. Nor can the door be stopped in its opening cycle by issuing a command.

If a further command is given during the door's automatic closing cycle, the door then opens completely. A command given during the door OPEN period restarts the given set period.

The partially OPEN function is automatically deactivated when the automatic CLOSE mode has been set.

The interior lighting can be used as a second warning light. This involves the interior lighting being disconnected and an external warning light connected in its place.

In automatic CLOSE mode, the interior lighting and any external warning light that has been connected have one and the same function, i.e. to flash.

Example

- External warning light 1 connected to terminals 16 + 17, mounted to the outside of the garage.
- Warning light 2 connected to terminals 18 + 19, mounted on inside of garage.

Time can be set via potentiometer (29.13) for between 1 and 120 seconds.

Automatic CLOSE Mode - Option 1

The automatic CLOSE mode is automatically activated when the door reaches the OPEN final travel position. The period set via the potentiometer starts running from this moment onwards. A command given during the door OPEN period restarts the given set period.

35 Settings:

- Potentiometer (29.13) set to required time (1 - 120 seconds)
- DIL switches 7 + 8 OFF
- Other DIL switches set as required

See 'DIL Switch 29.8' section for details of behaviour of drive mechanism.

Automatic CLOSE Mode - Option 2

As described above, apart from the fact that the drive mechanism closes the door 5 seconds after the light barrier has been crossed. With this alternative, a safety contact strip can only be connected with an evaluation device.

35 Settings:

- Potentiometer (29.13) set to required time (1 - 120 seconds)
- DIL switches 1, 7 + 8 OFF
- DIL switch 4 ON
- Other DIL switches set as required

See 'DIL Switch 29.8' section for details of behaviour of drive mechanism.

Operation and Handling

Safety Instructions

- The drive mechanism may only be operated if a risk-free force tolerance has been set. The force set should be so small that the closing force does not constitute an injury risk. (See 'Force Setting' section).
- Keep your hands clear of a door in operation and of any moving parts.
- Keep children, disabled persons and animals away from the door.
- Only drive into and out of the garage when the door is fully open.
- Closing edges and workings of the door pose risk of injury.

Opening Door

- 27** • Press push-button (1) or button on manual remote control 1x.
- The door stops if the button is pressed during its opening cycle. See DIL switch 7 setting.
 - The door closes if the button is pressed again.

Closing Door

- 27** • Press push-button(1) or button on manual remote control 1x.
- The door stops if the button is pressed during its closing cycle. See DIL switch 7 setting.
 - The door opens if the button is pressed again.

Pulse sequence of gate movement

- 29.8** Pulse sequence is set using DIL switch 7.
- OFF : Open - Stop - Close - Stop - Open - etc.
- ON : - Push-button 1: Open - Stop - Open - Stop - etc.
 - Push-button 2: Close - Stop - Close - Stop - etc.

Emergency Release

- 25** • Pull once on emergency release wire (N): the drive mechanism disengages and the door can be opened by hand.
- Pull once again on emergency release wire (N): the drive mechanism re-engages and the door can only be power-driven (see fig.).
 - Door is fitted with a slip door but no safety mechanism for the slip door - retro-fit slip-door safety mechanism (see 'Accessories' instructions).
 - Door has no slip door and garage no second entrance - install release lock or Bowden wire option outside release access (see 'Accessories' instructions).

Control reset

- 33** • Press button (1+2) and keep depressed until filament lamp (2) goes out.
- When filament lamp has gone out, this means the force settings have been deleted - release push button (1+2).

Automatic cut-off of supply - Obstacle Identification

If, when **opening** the door, an obstacle is encountered or the light barrier is interrupted, the drive mechanism recognises this and reacts in accordance with the given DIL switch 1 setting. See 29.8.

If, when **closing** the door, an obstacle is encountered or the light barrier is interrupted, the drive mechanism recognises this and reacts in accordance with the given DIL switch 3 setting. See 29.8.

Interim Stop

If an interim stop occurs due to the operation of a push-button or the manual remote control, the drive unit stops immediately. The next command given sends the drive in the opposite direction. See 'Impulse Sequence of Door Movement' section.

Safety Stop (Emergency Stop)

If the safety input (somebody crosses the light barrier) or the automatic cut-off of supply function is triggered, the drive mechanism stops, reverses or opens the door, depending on the given DIL switch setting:

-DIL switch 1 + 3 - see 29.8.

The drive mechanism's next movement is always away from the obstacle concerned:

- safety stop during door closing - door opens
- safety stop during door opening - door closes.

Overload Protection

If the drive mechanism is subjected to excessive strain when opening or closing the door, this is recognised by the control unit which then stops the drive mechanism. After approx. 20 seconds or a control unit reset, the control unit deactivates the overload protection.

The drive mechanism can now recommence normal operation.

Operation after Power Failure

In the event of a power failure, the programmed force values are stored in the memory. The drive mechanism's first movement after a power failure is always in the door OPEN direction.

What Purpose Does the 2nd Push-button Serve?

Defined Opening and Closing (2-channel Operation)

If this function is used, a second button can be connected to terminal 4 + 5. For setting details see 'Additional Functions' section. This enables the door to be opened using one push-button, and closed using another.

Accessories

The accessories listed can be used in conjunction with all SOMMER garage door drive mechanisms.

Slip-door Safety Facility

If your garage door is fitted with a slip door, you need to have a slip-door safety mechanism installed.

Bowden Wire

If your garage has no slip door or separate entrance, you need to install an emergency release mechanism that can be operated from the outside. The Bowden wire enables you to extend the emergency release facility from the drive mechanism to the door. Use the long Bowden wire if your drive mechanism has a tilting arm, an extended drive shaft or if the garage is equipped with swing-door fittings.

Release Lock

An alternative to the Bowden wire.

Adjustable Drive Shaft

If the clearance between the door's highest up-position and the garage ceiling is less than 35 mm, you should install the drive mechanism further away from the door and replace the existing drive arm with an adjustable one.

Tilting Arm

This is needed for doors with a vertical guide rail (up-and-over doors). Beware, stroke travel may be up to 700 mm shorter. Fit (long) Bowden wire, if outside-access emergency release is required.

Important to note!

Installation of a tilting arm reduces net headroom by up to 160 mm.

Swing Door Fitting

This type of fitting is required for swing doors. The drive mechanism can be ordered with the swing-door option.

Please contact the Manufacturer if a customised swing-door solution is needed.

Vertical Sectional Door Fitting

A vertical sectional door fitting should be installed with the following door types:

- single-walled doors
- doors wider than approx. 3.5 m
- doors with a ceiling-mounted guide rail.

Locking Set

If the door is equipped with a shearing mechanism or if the door can be opened more than 5 cm in a closed state, an additional locking facility with a spring-loaded catch should be installed.

Status Indicator

This indicates whether the door is OPEN or CLOSED.

Rail Extension

This is used to extend the length of stroke travel.

Example: the net length of travel of up-and-over door drive mechanism is reduced by approx. 700 mm through the use of a tilting arm.

Ceiling Mounting

An additional ceiling mounting should be fitted if the rail is extended by 1.6 m or more.

Bow arm convertor System

A bow arm convertor is required to enable one-piece doors with canopy operating gear to be electrically operated. Typically, canopy doors have a spring located on the frame above the door opening and protrude from the front of the garage to create a "canopy" when in the open position.

Impulse Generators

Key switch

Opening and closing the door from outside. As the button can only be activated with a key, the opening and closing of the door by unauthorised personnel is eliminated. A connecting wire from the control housing to the key switch must be laid.

Funkcody

Opening and closing the door from outside. As the command to open and close the door can only be set with an access code, the opening and closing of the door by unauthorised personnel is eliminated.

No connecting wire should be laid from the control housing to the key switch.

Radio operated interior switch

Opening and closing the door from inside. When fitting in a normal double thick flush-box each preferred key can be included.

No connecting wire should be laid from the control housing to the key switch.

Maintenance and Care

Important Information

- Always disconnect the mains plug prior to working on the drive mechanism.
- Keep your hands clear of a moving door and any moving parts.
- Closing edges and workings of the door pose risk of injury.
- Check security and safety facilities every four weeks to ensure their correct operation. Eliminate any defects.
- All fixing screws on the drive should be properly checked and tightened if necessary.
- Check the door at least annually, in accordance with the manufacturer's instructions.

Cleaning the Chains and Runner Rails (Tracks)

- 26** • If the chain (7) or runner rails (8) are heavily soiled, clean them using a clean cloth.
- Lubricate the chain sparingly with „conductive“ oil once a year. Do not use grease!



Recommended oil type: Ballstol

Regular Check

Check safety facilities on a regular basis, 1x per year at least, to ensure correct functioning (ZH 1/494 April 1989).

Check safety facilities that are sensitive to pressure (e.g. safety contact unit) every four weeks to ensure correct functioning (see pr EN 60335-2-95).

Check	Behaviour	yes/no	Possible cause	Remedial action
Automatic cut-off of supply				
Try stopping the door wing with your hand when it is opening/closing. Do not try to hold the door wing tight.	Door stops when slight pressure applied?	yes	<ul style="list-style-type: none">• Automatic cut-off of supply is working as it should	<ul style="list-style-type: none">• Leave all settings as they are.
	Door drive reverses when it encounters an obstacle 50 mm high when moving in a door CLOSE direction.	no	<ul style="list-style-type: none">• Potentiometer adjusted as far clockwise as it will go. Force tolerance set too high.• Control unit defective	<ul style="list-style-type: none">• Reduce force tolerance. Turn potentiometer adjustment in an anticlockwise direction until such time as the test is successful. Beforehand, open and close the door fully 2x under supervision.• Take door drive mechanism out of operation and ensure it cannot restart by accident. Contact after-sales service!
Emergency release mechanism				
Procedure as described. See 'Emergency Release Mechanism' section	Door must be readily opened/closed by hand.	yes	<ul style="list-style-type: none">• Everything in order!	
		no	<ul style="list-style-type: none">• Door jams•	<ul style="list-style-type: none">• Check door. See door maintenance instructions.•
Safety switch unit, if provided				
Open/Close door whilst, at same time, operating safety switch unit.	Door behaves in accordance with setting of DIL switch 1,2 or 3.	yes	<ul style="list-style-type: none">• Everything in order!	
		no	<ul style="list-style-type: none">• Broken cable, loose terminal• DIL switch maladjusted• Switch unit defective	<ul style="list-style-type: none">• Check wiring, tighten terminal connection.• Correctly adjust DIL switch• Take door drive mechanism out of operation and ensure it cannot restart by accident. Contact after-sales service!
Light barrier, if provided				
Open/Close door whilst, at same time, interrupting the light barrier.	Door behaves in accordance with setting of DIL switch 1,2 or 3.	yes	<ul style="list-style-type: none">• Everything in order!	
		no	<ul style="list-style-type: none">• Broken cable, loose terminal• DIL switch maladjusted• Light barrier soiled• Light barrier maladjusted (bent bracket)• Light barrier defective	<ul style="list-style-type: none">• Check wiring, tighten terminal connection.• Correctly adjust DIL switch• Clean light barrier• Correctly adjust light barrier• Take door drive mechanism out of operation and ensure it cannot restart by accident. Contact after-sales service!

Replacing Filament lamp on Control Unit

- Disconnect plug from socket.
- 37** • Remove light window (2).
- Turn lamp (2) anticlockwise and pull off.
- Fit new filament lamp (24 volt, 21 watt, type BA 15s) and turn clockwise until it locks into position.

Replacing fuses

- Disconnect plug from mains socket.
- 32** • Remove control unit lid (1). Remove screws (2).
- Pull out control unit (3).
- Replace defective fuse; all fuses are 1A, slow-blow type.

Disassembly

Observe safety instructions!

The sequence of operations is identical to that described in the Section entitled „Installation“ but in reverse order. The setting procedures described are not applicable.

Warranty and After-sales Service

Warranty complies with statutory requirements. Any warranty matters should be discussed with your local stockist. Warranty entitlements only apply for the country in which the drive mechanism was purchased.

The warranty does not cover batteries, fuses and filament lamps.

If you require after-sales service, spare parts or accessories, please contact your specialist retailer.

We have endeavoured to make our Installation and Operating Instructions (MBA) as clear and comprehensible as possible. If you have any suggestions as to how this can be improved or if any information is missing, please send your suggestions to us:

Fax.: 0049 / 7021 / 8001-53

e-mail: doku@sommer-torantriebe.de

Troubleshooting

Door drive faults can be solved by referring to the table below. If you cannot solve the problem yourself, contact your local stockist for advice or visit our Internet site at <http://www.sommer-torantriebe.de> and click on 'Forum'.

Fault	Possible cause	Remedial action
Drive mechanism inoperative, lamp not lit	No mains power Fuse in garage circuit has blown	Use a different appliance, e.g. electric drill, to check the supply. Replace the fuse.
Drive mechanism inoperative when using manually-operated remote control	Battery in manual remote control is flat Manual remote control not programmed on radio receiver Radio command constantly activated due to jammed push-button Automatic CLOSE operation activated	Replace battery by fresh battery Program manual remote control Release push-button or replace HS Door closes automatically once the set time has elapsed Deactivate automatic CLOSE operation
Door stops when closing and moves roughly 10 cm in opposite direction before stopping	Obstacle has tripped automatic disconnection of supply Wrong force values learnt Force tolerance too low	Remove obstacle, use switch to open door completely. Delete force values and read in new ones. Only if this does not help, then raise force tolerance. Readjust the potentiometer. See Section entitled "Force Adjustment".
Door stops when opening	Obstacle has tripped automatic disconnection of supply Wrong force values learnt Force tolerance too low	Remove obstacle. Use switch to close the door completely. Delete force values and read in new ones. Only if this does not help, then raise force tolerance. Re-adjust potentiometer. See 'Setting Force Tolerance' section.
Door can only be operated if the external push-button e.g. interior switch, key switch is kept depressed - at the same time the interior lighting flashes (dead man operation)	Door encounters obstacle when moving in both directions	Remove obstacle. Then move door to final travel position. The drive mechanism functions as usual.
Lamp is not lit when door closes and opens	Filament lamp faulty	Replace filament lamp. See Section entitled "Replacing the Filament Lamp on the Controller".
Drive mechanism only operates via push-button	Manual remote control not programmed on radio receiver Radio receiver defective Manual remote control defective	Program manual remote control Replace control unit Replace manual remote control
Drive mechanism does not close door	Safety input triggered (e.g. light barrier defective) Drive mechanism was disconnected from mains supply	Repair light barrier The first command issued after the mains supply has been restored always sees the drive mechanism fully opening the door.
Drive mechanism opens door but then no further reaction to command given via push-button or manual remote control	Safety input triggered (e.g. light barrier defective)	- Repair light barrier - Remove obstacle from path of light barrier - Socket unit not plugged in correctly
Connected warning light does not light up	Fuse defective Warning light defective	Replace fuse Replace lamp
Opening/Closing speed slowing down	Chain rail soiled Chain rail lubricated with wrong oil	Clean rail and re-lubricate. See 'Maintenance and Care' section Clean rail and re-lubricate. See 'Maintenance and Care' section

